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Engineering & Computer Science BITS

CENPARMI/Bell Canada Form Partnership

Mr. Caron and Dr. Suen sign the partnership aggreement. (Back row L-R) Vice Rector Bui, Rector Kenniff and Dean Taddeo.

Right now Bell Canada is making sure that the cheque you sent to pay last month's phone bill is signed, properly dated and made out for the correct amount. That task is not hard for one account, but imagine having to repeat the process 7 million times for residential accounts and 600,000 times for commercial accounts. The job suddenly seems a little more daunting. Bell has 600 full-time employees devoted to payment verification. No wonder they are so excited about the developments that Dr. Ching Suen (Associate Dean - Research) and his associates have made at Concordia's Centre for Pattern Recognition and Machine Intelligence (CENPARMI).

Dr. Suen's team, which includes researchers at Ecole Polytechnique and Ecole de Technologie Supérieure, has been working on a computer system which can recognise and read handwriting by mimicking human thinking patterns. According to Christine Nadal, one of the researchers on the project, they have developed some of the component parts, "Now we have to complete them and stick them all together to create a full package." Put it that way, and it does not sound as if they have too much to do, but do not be fooled. When dealing exclusively with hand written numbers the computer must first go through a loop of analysis, separation and comparision before it can decide that 357 is actually 357. Getting it to realize that 357 is also three hundred fifty-seven, uses the same principles, but is a little more difficult, given the vast difference in people's handwriting. "The system," says Nick Strathy, another member of Dr. Suen's team, "already works well with numbers and postal codes."

Well enough, in fact, that on Monday, November 15th, Bell signed a contract with Dr. Suen at a ceremony in the Faculty Club. The contract, worth almost a half million dollars, is for the development, over the next two and a half years, of a working prototype system. After implementation and hardware realization, Bell hopes to have the system up and running by 1998. At the signing ceremony, Mr. Jean-Louis Caron, Vice-President for Network Planning of Bell Quebec, said that he believes the contract will be beneficial for both parties. "It will give us [Bell] a more efficent system, allowing us to better serve our clients, by reducing our costs and passing the savings along to them." He also said that he was very pleased that Dr. Suen and Concordia, a partner of choice for Bell, had decided to accept the challenge. Before introducing Dr. Suen, Dean Donat Taddeo, told those in attendance he was particularly pleased that technology developed in Quebec was going to be used for industry in Quebec. Of Ching Suen he said, "What better role model could you wish for in an Associate Dean - Research." For his part, Dr. Suen was, as usual, very soft spoken. He spoke of his pride in the growth of CENPARMI and thanked everyone who had had a hand in getting his team to this point. And, as for his relationship with Bell, he summed up industry/university relations quite nicely, "We will work together."

PROFESSOR TO BE HONOURED FOR BRAVERY

The Faculty offers its heart felt congratulations to Dr. George Abdou who will be in Quebec City on November 25th to be publicly recognized by the provincial government for bravery. Quebec Justice Minister Gil Rémillard wrote to Dr. Abdou informing him of the award and congratulating him for his "courageous act during the particularly difficult circumstances of August 24th, 1992."

An article about the ceremony will appear in the next issue of Bits.

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EVENTS OF NOTE

* At Fall Convocation on November 9th, degrees at the Bachelors, Masters and Doctoral levels were conferred on 100 students from the Faculty of Engineering and Computer Science.

* Also at Convocation:
-Mr. Eric Molson, Chairman of the Board of the Molson Companies Limited , was installed as Concordia's fifth Chancellor.
-Honourary Doctorates were awarded to Ms. Mary Eberts, a senior constitutional lawyer, and Dr. Victor Goldbloom, the Federal Official Languages Commissioner.

* Dr. Radu Zmeureanu, Centre for Building Studies (CBS), was recently interviewed by the Quebec housing newspaper, *Habitabec*. Dr. Zmeureanu discussed the benefits of using energy analysis software in the design of homes. Also mentioned in the article were seminars offered by SIRICON, an initiative of CBS to help the construction industry adapt to emerging technologies.

* Dr. Jeremiah Hayes (Electrical and Computer) gave an invited lecture, *An Estimation/Prediction Approach to Congestion Control*, at the Université de Laval in Quebec City on October 28th. Dr. Hayes' book, Data Communication Principles, (Plenum Press, 1992) has recently gone into second printing.

* Prof. Corinne Jetté, Advisor to the Dean, took part in a pedagogical day at Vanier College on October 22nd. The day's topic was *Skills for Life-Long Learning: A Cooperative Agenda for High School and CEGEP Teachers*. The key note speaker was Deputy-Minister of Education, Janyne Hodder. Prof. Jetté and Jeremiah Stack (Father McDonald High School) ran a workshop entitled *The Problems of Literacy: Language and Reading*.

* On Friday, November 26th the students of the Civil Engineering Department and the Centre for Building Studies will hold their annual Christmas dinner and dance at the Brochetterie du Vieux Port in Old Montreal. For more information call 7911 or 7912.

* Concordia's graduate scholarship and fellowship winners were honoured at the recent Graduate Awards ceremonies. Thirty-two students from the Faculty received their awards at the evening reception. Congratulations to all of them.

* Congratulations to Jennifer Apostolakos, Student Affairs Coordinator, and her husband, Dennis, on the birth of the baby boy, *Aristide Harrison*, who arrived on October 26th... ...At the same time the Faculty would like to welcome Linda MacDonald, who will be replacing Jennifer for the duration of her maternity leave.

* On Friday, November 19th members of the Dean's Office honoured Ann Mylchreest at a lunch for her long-term service and contribution to the Faculty. Ms. Mylchreest has worked at Concordia in the Faculty of Engineering and Computer Science under four different Deans.

Reduce, Reuse, Recycle and Recover.

Please do your part, recycle this copy of *Bits*.

UNDERGRADUATE EQUIPMENT FUND SUPPORTS ANNUAL GIVING

In the 1992-93 Annual Giving Roster of Donors there are only nine individuals or groups (not including corporations) who listed as donating $10,000 or more. One of these groups is the engineering and computer science undergraduate students.

Over the past seven years undergraduate students in the Faculty of Engineering and Computer Science have donated almost $600,000 to Concordia's Annual Giving Campaign. They are, in fact, one of the largest donors to the campaign each year. (The $83,000 they raised in 1992-93 accounted for 4.5% of the Annual Giving total.) The University, as a rule, is not allowed to solicit donations from students. However, in 1986, the Faculty's undergrads decided, through a referendum, to give Concordia $50 a year per full-time student and $25 a year per part-time student, for the specific purpose of improving their own laboratories. The monies raised are counted in Annual Giving and then handed over to the Faculty where they are administered by the Engineering and Computer Science Association (ECA), in conjunction with the Dean's Office and the departments. Past purchases have included: tools for the engineering machine shop, an electronic drafting board and Sun workstations. Several other applied science schools in the province, including McGill, also have student-directed laboratory funds.

The meetings for the disbursement of the 1992-93 funds will occur during the month of November. Purchases will be reported in a future issue of Bits.

FACULTY FACES

Joe Woods & Donato Vincenti - Electrical and Computer Engineering

Faculty Faces is a regular feature of *Bits*, focusing on personalities within Engineering & Computer Science.

The day I arrived in the Power Electronics and Adjustable Speed Drives lab, three or four groups of electrical undergrads were fiddling around with various wires and motors, some graduate students were carefully examining experimental results on a computer and, as I took in all of this activity, my heart began to beat faster. Now, I am not trying to perpetuate any stereotypes that might be floating around this Faculty, but my background is in Building, and Basic Circuits was more than I ever cared to know about electricity. All I want to know is that when I plug in my TV, VCR, computer or coffee maker it will be getting enough power to satisfy my needs within as short a time as possible. Joe Woods tells me most people feel that way. "Nobody ever questions what happens on the other side of the plug," he says, "down here that's our life." And with that he began my crash course in power electronics.

Donato Vincenti(left) and Joe Woods (right) at home in their lab.

Using a scratch pad and diagrams, Joe took me through some of the lab's research projects. Power electronics is, basically, the transformerless conversion of electricity using transistor switches. The use of switches, in various configurations, allows them to study a wide range of applications. In the area of digital signal processing they are looking at the control of motors using low voltage at a distance. "The biggest benefit from this application so far, has been all that stuff that you see on stage during a rock concert. The lights and smoke and effects, all used to be controlled by an army of people on or near the stage. Now it's controlled by one or two people way back in the concert hall." Another area of research is uninterruptable power supplies (UPS). "UPS used to be used only in really critical areas, like hospital operating rooms. Now as people become more and more dependant on electronics, UPS are being installed more often." The only drawback of this type of uninterruptable system is that it involves the use of battery packs which are not environmentally friendly. They also are interested in power factor correction. Of the power which arrives at a given point only a certain percentage is available for use. Power factor correction keeps the current to voltage ratio within acceptable limits so the amount of usable power is as great as possible.

Joe Woods was an electrician at Deutz Deisel when he started coming to Concordia to take pre-science engineering courses in 1976. His job, at that time, involved power supplies of a different nature from those he works on today - the company produced back up deisel generators for hospitals and public works systems. In 1983, he began at the University as a instructor/demonstrator for Basic Circuits and Physical Systems. Now doing his Masters degree, Joe is the technician for the Electromechanics and Power Electronics labs, a job he has held since 1990. One of his old lab partners, Donato Vincenti, is an instructor in the Power lab. Like Joe, he is working towards a higher degree (Ph.D.) in engineering as he teaches.

Donato was eager to tell me about the applications and potential applications of the research they are doing in the lab. He pointed out that the average consumer knows little or nothing about power electronics as yet, but they will soon be hearing a lot more about it. "Video communications, electric vehicles and integrated buildings will all be based on power electronic components. And all of these things should be available to the mass market in the near future." He also believes our lab is a great place to train the people who will develop these products, "We use the same equipment and software here as they use in industry, when someone is trained here, he or she leaves ready to be a productive member of any firm which is developing power electronics."

Both Joe and Donato said that no one ever goes to visit them in H 0015. If you have a spare hour, give them a call. They will be happy to show you around.

FACULTY UNDERGRADUATE AWARDS DAY

On Wednesday, November 24th the Faculty will honour undergraduate academic excellence. Students who are on the Dean's 1992-93 Honour List (weighted grade point average of 3.7 or more) and/or are Canada Scholars will be recognized at a ceremony beginning at 17h00 in H 110. Some students will also be receiving an Dean's Merit Award, which is given to Honours List students who were studying full-time last year and who are still full-time undergraduates this year. After the awards are presented, the recipients and invited guests will attend a reception in the Sir George Williams Faculty Club.

Canada Scholars

Sarah Andrews
Prakash Appanna
Marco Arquilla
Ngoc Quang Bach
Michel Brazeau
Tien Hy Bui
Nestor Caouras
Nancy Capporicci
Hong Cheun Cheng
Kam Shing Cheung
Diana Crisante
Mina Danesh
Jorge Chang Diaz
Luisa Dodaro
William D'orazio
Giuseppina Di Spaldro
Carousel Galang
Octavian Grigoriu
Anupma Grover
Seyed Hashemi
Abbas Ismail
John Klironomos
Linda Kudzman
Riad Fuad Kyriakos
Ho Ching Lai
Fu-Shan Leong
Lan Mai
Simmi Mangat
Barry Messier
Diana Mikuc
Jean Molina
Wing Yeung Mok
Robert Morawski
Steven Neemeh
Nguyen Huong Nguyen
Khanh Ngan Nguyen
Koushika Patel
Eric Smith
Duc Tho Vu
Khanh Tuan Vu
Ying Ying Vuong
Judy Yee

Dean's List

The following students represent the top 7% of grades in the Faculty of Engineering and Computer Science.

Christina Adams
Prakesh Appanna
Oliver Astley
Albert Azoulay
Ngoc Quang Bach
Gyorgy Balogh
David Bauer
Marc Bédard
Bruno Bendavid
Stefano Bologna
Robert Bonazzuoli
Saba Mazen Bou
Betty Jean Brown
Tien Hy Bui
Guiseppe Campanelli
Richard Centomo
Soo Yong Chai
Cu-Phu Chan
Neeraj Chandra
Koya Charles
Chi Ching Cheung
Kam Shing Cheung
John Chiappini
Bilal Chouman
King Sun Chui
Kathleen Clark
Xiao-Feng Dai
Tai Danan
Ziad Dandachli
Mina Danesh
Thanh Nguyen Dang
Amir Daniel
Duy Hoa Dao
Lisa De Bellis
Karine Desbiens
Luisa Dodaro
Thinh Duong
Mark Fazio
Henri Feinberg
Philip Fortier
G.J. Paul Francoeur
J.J. Francois Gagnon
Ricardo Gama
Edoardo Gavita
Milorad Gavrilovic
David Gelfand
Mehran Ghomi
Eyal Goren
Anupma Grover
Steven Gujsky
Joseph Hachem
Amai Hantash
Joseph Nasri Hazboun
Ronald Hofmann
Lee Hopkins
Wajih Khalil Hoteit
Yi-Ching Hsieh
Huu Minh Dang
Vitaly Iourtchenko
Sachin Jari
Isabelle Jetté
Mark Kabbas
Parmjit Kanth
Charlie Bishara Kawwas
Moghtader Guiti Koushyar
A.N. Eric Lafortune
Ho Ching Lai
Shuk-Wah Lam
Eric Langlais
Richard Latella
Minh An Khang Le
Daniel Lefebvre
David Leibov
Thierry Lepoutre
Xue Mei Liu
Mohammed Lokman
Boris Lorkovic
Barry Messier
Guenadi Miliavski
Nadia Minicucci
Wing Yeung Mok
Maria Motillo
Dat Nghiem
Hoang Uyentrang Nguyen
Tan Khai Nguyen
Tang Hung Nguyen
Thanh Tu Nguyen
Roberto Nitti
J.F. Patrick Page
Angelo Palumbo
Depsina Papoulis
Jitesh Patel
Koushika Patel
Jimmy Pocetti
Oana-Mirela Popistas
Peter Pozar
Danny Prairie
Piotr Przybylski
Rajeev Rantuhol
Les Raschkowan
Maria Cristina Rizzuto
Lynda Rondeau
Davis Salhany
Manoucher Shaditalab
Arif Hasnat Siddiqi
Man Wai Siu
Mohamad Sleiman
Norman Slovacek
Geoffrey Stirling
Deenesh Venkata Subhadu
Sylvia Tamme
Kam Pui Tang
Kamran Tavakoli
Harvey Too
Diana Trasente
Bernard Tremblay
Grigorios Trigonakis
Ricardo Trindade
Nguyen Duc Phuo Truong
Giovanni Tucciarone
Ngan Thuy Vo
T. Ngoc Lan Vo
Thu Uyen Vo
Stuart Wachsberg
Anthony Watson
Michael Wong
Helen Xenos
Haipeng Xie
Cyril Sze-Ning Yuen
Waleed Zaarour

THE OFFICE OF STUDENT AFFAIRS

Student Affairs Co-ordinator

The Student Affairs Co-ordinator plays an important role in the student life of the Faculty. She is the Faculty's frontline person with students for academics. She is responsible for programme changes, processing of and responding to student requests, readmission and generally dealing with academic problems which may affect students during their stay at Concordia. She is also a part of the admissions process for graduate studies. The post of Student Affairs Co-ordinator was, until recently, held by Ms. Jennifer Apostolakos. Before she left for maternity leav, I spoke to her about her job.

Ms. Apostolakos believes students should not feel embarrassed about going to see the Faculty's Student Affairs Co-ordinator. "It's a very professional, proactive thing to do. The service we offer is completely confidential. If you [a student] have a problem which is affecting you academically, we can usually help take care of it." She finds that many students' problems stem from the fact that very few of them read the academic regulations at the front of the *University Calendar*. For instance, every year, one or two students will end up in her office because they have failed a course they thought they had discontinued. "You can't just drop a course by not going to class. You have to submit a request to the Dean's Office, so we can remove your name from the roll." And, of course, there are deadlines to respect. "All this information is in the *Calendar*, I strongly urge all students, graduate and undergraduate, to familiarize themselves with it." [The University's contract to the students is that they are evaluated on the requirements printed in the Calendar of their year of admission (or readmission).]

Other problems arise from students being out of sequence, or skipping pre-requisite courses. "The prerequisite structure is in place for a reason," she points out. "Both engineering and computer science involve very heavy course loads. Students who skip prerequisites often find they don't have the necessary background knowledge to successfully complete more advanced courses."

No matter how a student's problem arises, the Student Affairs Co-ordinator will try and help them solve it. Course loads can be lightened, programmes can (generally) be switched, and, if a student decides that they do not belong in engineering or computer science they can be referred to career counsellors or other faculties. Ms. Apostolakos urges students to contact her office as soon as a problem becomes evident, "We try our best to resolve problems, but if you wait too long, there may be little or nothing we can do."

Linda MacDonald will be replacing Ms..Apostolakos for the duration of her maternity leave. She will be happy to see any students who are experiencing academic difficulties. You can reach her at extension 3066.

Both graduate and undergraduate Calendars are available at the bookstore.

PARLIAMENTARY INTERNSHIPS

Each year the Canadian Political Science Association chooses ten young Canadians to take part in their Parliamentary Internship programme. The programme is designed to provide private Members of the House of Commons with highly qualified assistants and enhance the intern's knowledge of the workings of Canadian government. Selected candidates spend ten months in Ottawa, working for a different MP in each of the five month sessions. Travel expenses are paid, and a stipend for living expenses is provided.

Applications containing more information about the programme are available at: theDean's Office (H 907), ECA (H 880-10) and the Communications Office (H 929-7).

More information is also available from François Houle or John Armstrong at 613-564-7550.

The deadline for application for the 1994-95 programme is January 28th, 1994.

HELP A NEIGHBOUR

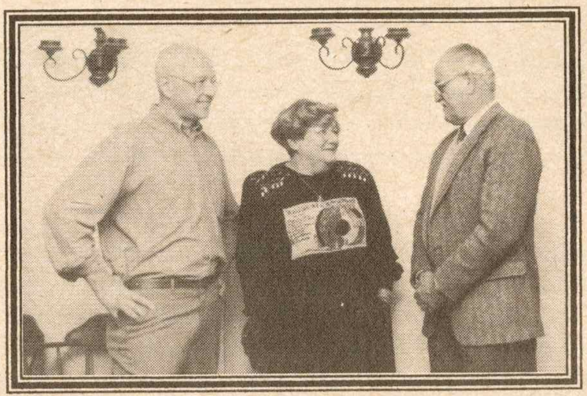
Please help a less fortunate neighbour during the Chanukah and Christmas seasons. The Commerce and Administration Student Association (CASA) will be holding a drive for money, **toys, clothing and non-perishable food.**

November 22nd to November 30th
Hall Building, Mezzanine
10h00 to 17h00

December 1st to December 8th
Hall Building, Lobby
10h00 to 17h00

This project's success depends on the participation of the whole University community, please give generously.

Engineering Alumni Celebrate 25th Anniversary



Leslie Stock (Electrical Engineering '68) and his wife get reacquainted with Dr. Otto Schwelb (Electrical & Computer Engineering).

Homecoming at Concordia always attracts many alumni. This year was particularly significant for the Faculty of Engineering and Computer Science - it marked the 25th anniversary of the graduation of the Sir George Williams University's Prototype class in engineering. Members of this class, and their spouses, returned, from the 14th to the 16th of October, to meet old friends and get reacquainted with the haunts of their youth. On Friday, October 15th, the Faculty hosted a reunion lunch and tour of its facilities. During lunch it became clear that the engineering student's experience has not changed much since 1968. Despite huge advances in the technology and tools available to them, it appears that undergraduates have always felt overburdened. The tour of Faculty facilities let the Alumni see how our physical resources have changed over the past 25 years. They visited the Centre for Building Studies, which did not exist until 1977, and laboratories in every other department, including Computer Science. Even though most of their undergraduate degree work was completed in the Norris Building, each area of the Hall Building brought back memories. Comments such as, "Hey, that motor was new when we used it!", kept the tour lively. In the evening the alumni attended the Rector's Reception at the St. James Club, and , on Saturday, several of them joined the crowd which cheered the Stingers to victory out at Loyola.

Thanks to everyone who invited the Prototypes into their labs.

Recycling Tips

You can deposit paper and cardboard waste for recycling at eight bins strategically located in Hall building. Office paper waste is collected in the blue box located in each office area. Each year Concordia ships over 200 tonnes of paper and cardboard to a local recycler thanks to your efforts. The recycler uses these wastes to manufacture paper towels toilet paper, tar paper and insulating materials. Wastes that can be recycled include newspapers, writing paper, computer paper, photocopies, envelopes, magazines and thermal fax paper. Non-recyclable materials which contaminate the recycling process are wax paper, plasticized cardboard juice boxes, Post-It Notes and food packaging that has been soiled by liquid and food scraps (Eg. cardboard pizza boxes).

- Philip Goldsmith.

If you are interested in more information on recycling activities at Concordia contact Stephen Grenon, Recycling Co-ordinator, at 7351.

Undergraduate Award

The Society for the Advancement of Material and Process Engineering (SAMPE) has an awards programme for undergraduate students. These awards recognise past and present scholastic and technical achievement and future potential. They also take into account specific courses of study, academic awards and honours, work experience, campus and community activities and a written submission demonstrating the student's knowledge of processing and materials technology as related to his or her field of study.

Applicants must have completed at least one term of study by February 1st, 1994 and have a minimum cumulative grade point average of 3.3. (As this programme is aimed at undergraduates, graduating students cannot apply.) Awards can be as much as $5000 US funds. Last year only four of the 213 applicants were from Canadian universities.

If you are interested in this programme, applications are available from the front desk in the Dean's Office, H 907, or at ECA, H 880-10. Deadline for submitting applications is February 1st, 1994.

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Bits welcomes submissions from members of the Engineering and Computer Science community.
Please send all submissions to :
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